



# Climate Action Plan 2050

Policy paper by the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety for the launch of the participation and dialogue process

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## I Mandate and goal

Climate action needs long-term orientation. This is why the government's coalition agreement specifies that a national climate action plan 2050 will be adopted in the course of this legislative period. The German government has given the mandate to the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety to draw up this plan and to coordinate it with the other ministries so that it can be adopted by Cabinet in 2016.

The guiding principle and benchmark for climate policy is the internationally agreed two degree Celsius limit for global warming in comparison with pre-industrial levels. We need this limit to prevent the worst impacts of climate change and to ensure options for adaptation do not disappear. This requires quick and determined action and a complete shift to a zero-emission global economy by the end of this century at the latest. We also need profound social change that covers all areas of our lives. The two degree limit is the benchmark for the EU and Germany's climate targets. The German government's Climate Action Plan 2050 aims to provide orientation for this transformation process to reach the national climate targets by 2050 and will be a key instrument for shaping this process.

The Climate Action Plan 2050 will in particular lay down interim targets for the post-2020 period in order to achieve the long-term climate goal, back this up with measures for the next specific reductions steps in the light of European targets in a broad dialogue process and establish a transparent monitoring process.

The Climate Action Plan is not an inflexible instrument; it is a timetable for the move to a climate-neutral economy. It will be adapted and updated at regular intervals to respond to social, political and economic requirements and changing conditions beyond Germany and the EU. These subsequent plans will ensure that the effectiveness of the measures adopted



is regularly reviewed and adapted or restructured where necessary. This will enable Germany, now and in future, to remain on a path leading to achievement of the climate targets.

Acceptance for climate action measures and the active participation of a large number of people are crucial to the success of climate action measures. This is why the German government established a dialogue and participation process with the Länder and municipalities, industry, interest groups and civil society with its Cabinet decision of 3 December 2014. In contrast to the Climate Action Programme 2020, the plan is to involve the public for the first time in addition to the Länder, municipalities and associations.

In this policy paper the BMUB outlines the starting situation and the possible elements of a first climate action plan. It also outlines the concept for public participation in drawing up the Climate Action Plan 2050.

## **II Starting situation**

2015 is a crucial year for climate action. At the UN climate change conference in Paris at the end of this year we want to adopt a new ambitious climate agreement with all parties which enters into force in 2020. All countries have agreed to submit their own intended nationally determined contributions before the Paris conference. As its contribution to the Paris agreement, the European Union has agreed to reduce its greenhouse gas emissions by at least 40 percent by 2030 in comparison with 1990, and in doing so is taking on a leading role internationally.

As its long-term goal, the European Union is aiming to reduce its greenhouse gas emissions by 80 to 95 percent compared with 1990. For Germany, this means almost complete avoidance of greenhouse gas emissions. A comprehensive transformation will be required to achieve this: in energy supply, the transport and buildings sectors, agriculture, the waste sector, industry and in the trade, commerce and services sector. The clock is ticking.

This transformation will only succeed if we lay the right foundations today. This is why the German government, under the lead responsibility of the Federal Environment Ministry, drew up the Climate Action Programme 2020. It was adopted by Cabinet at the end of last year. This programme, and its broad catalogue of over 100 measures, aims to ensure that



greenhouse gas emissions in Germany will be cut by at least 40 percent by 2020 compared with 1990.

The IPCC's Fifth Assessment Report clearly shows that the impacts of global climate change are already being felt. In the coming decades there is a threat of increased heat waves and other extreme weather events, with increasingly severe impacts for man and social, economic and ecological systems. According to the report, without prompt and ambitious climate action the global temperature is likely to rise by an average 4 degrees Celsius or more in this century. This would lead to even greater risks. The options for adapting to climate change would disappear. There would be an increased likelihood of abrupt, irreversible climate change, so-called tipping points. The IPCC stresses that in view of the expected climate change, the current adaptation measures are inadequate.

However, the report also shows that it is still possible to achieve the internationally agreed goal of limiting global warming to below two degrees Celsius compared with pre-industrial levels by implementing ambitious, strategic, long-term climate policy. In the long term, anthropogenic greenhouse gas emissions have to be reduced to net zero worldwide in this century. All countries in the world have to step up their climate action efforts. In particular, energy systems throughout the world have to be almost completely decarbonised by the middle of this century. The IPCC's findings reinforce the German government's ambitious climate targets. With these targets, Germany is making a crucial contribution to international climate action and showing the international community that this dedicated climate policy also enables opportunities for innovation, competitiveness and sustainable economic development to be used.

The idea of transposing the 2°C target into a more specific global transformation target (climate neutrality or decarbonisation) is finding an increasing number of supporters internationally. So it is not a question of unilateral action by Germany independent of international and European developments. It is a question of emphasising, in a credible way, that with its Climate Action Plan 2050 Germany is pursuing the long-term transformation that is required at international and European level and is thus actively participating in European and international processes.

Essentially, structural change and modernisation are fixed parameters of our economic activities and are a necessary condition for securing international competitiveness. It is a question of linking this change in an intelligent way to the necessary transformation to a



climate-friendly economy and society, and in doing so making the most of economic opportunities through innovation and greater investments. However, the longer it takes to achieve this transformation, the greater the costs, burdens and economic risks. Conversely, structural change in good time increases Germany's competitiveness in a global economy geared towards climate neutrality in this century.

### **III Elements of the Climate Action Plan**

The Climate Action Plan will bring progress on three levels:

1. The Climate Action Plan will develop concrete guiding principles for individual fields of action for 2050.
2. The Climate Action Plan will outline transformative paths for all sectors, look at critical path dependencies and present interdependencies between different fields of action.
3. The Climate Action Plan will specify concrete reduction steps and measures for the 2030 interim target in particular.

The basis for the Climate Action Plan 2050 is the goal of almost complete greenhouse gas neutrality by 2050. Derived from the climate target for 2050, the Climate Action Plan will contain guiding principles and indicative strategic paths for all sectors.

The long-term goals in Germany's Energy Concept are very heterogeneous and focus largely on electricity production and energy efficiency. For some sectors there are only final energy saving targets (for example in the transport sector). For other sectors, like agriculture, there is a complete lack of long-term targets. The dimensions of urban and regional planning, and broad social change in production and consumption structures, do not feature. And there is still no adequate long-term perspective for many areas of industry.

The Climate Action Plan will contain a comprehensive and coherent strategy covering all relevant sectors. It will also create an opportunity to identify conflicts between goals and critical interactions and path dependencies in good time. This is a way of ensuring that future options, for example for achieving targets at the top of the target range for 2050, are not hindered (prevention of lock-in decisions). The aim is to utilise synergies between climate action measures and other policy fields, for example air pollution control, and also to resolve possible conflicts between goals when drawing up the plan.



The Climate Action Plan aims to develop strategic measures and to combine compatibility of climate action with social equity, democracy and participation, affordable and good housing, adequate mobility and greater quality of living.

In contrast to the guiding principles and strategic paths to be formulated for the period up to 2050, the statements in the Climate Action Plan for the period up to 2030 and, in some cases, up to 2040, can be much more specific.

As the plan will be updated at regular intervals and future technological and economic developments cannot always be predicted, it is neither possible nor necessary to spell out all measures up to 2030 in detail. This regular updating allows the Climate Action Plan 1.0 to focus on the essential foundations and strategic measures.

A new element in comparison with the Energy Concept is the planned broad participation process for drawing up the Climate Action Plan. This will contribute to bringing the guiding principles into more concrete form, establishing them and securing acceptance for them and the accompanying strategies. The goal is to take account of the social change resulting from the transformation process and the need for broad participation of all stakeholders in the actual development stage of the Climate Action Plan.

## IV The individual areas of action

It was already clear with the Climate Action Programme 2020 that there is additional potential for emission reduction in all sectors. This becomes even more true when the focus turns to the year 2050 and to developments and options that can already be recognised today. The definition of sectors is based on the UNFCCC reporting on greenhouse gas emissions. Sectors are structured according to source categories (the so-called source principle). This means, for example, that emissions resulting from the use of electrical appliances in households, from the commerce, trade and services sector, from industry and from the transport sector are assigned to the energy sector. The Climate Action Plan will also comprehensively address possible links and interfaces that can result between strategies in the individual sectors, thus providing an overall framework.

### a. Energy sector

The energy sector has the highest greenhouse gas emissions and therefore holds the greatest potential for reduction. By 2050 this sector will have to make the main contribution to climate action. A range of reduction options in other sectors are based on replacing fossil fuels with electricity (e.g. heat pumps in buildings, electric mobility).

Key challenges include the following:

- How can the complete transition from fossil fuels to renewable energy sources for electricity generation be accomplished by 2050? (climate neutrality)
- How can the energy efficiency potential be tapped in this area?
- What contribution can and should emissions trading make?
- How can this transition be best supported, in terms of both structural and social policy?
- Apart from electricity generation, how high is demand for renewable energy in the fields of heating and transport? What is the medium- and long-term potential, and what cross-sectoral development pathway is needed and can be sustainably implemented? Which development pathways are then needed for individual technologies, and how can these be sustainably implemented?
- How can we achieve acceptance for timely grid expansion?



- What proportion of fossil fuel power plants do we need for a transitional period, and for how long?
- What potential is there for a sustainable use of biomass (including in other sectors, and taking into account nature conservation, limited land availability and competition in land usage with food and animal feed)?
- How can we ensure long-term affordability and security of supply, and achieve the acceptance needed?
- What role do decentralised energy supply concepts play?
- How can we best make use of the potential of the EU's internal market (e.g. renewable energy expansion, storage capacities, secure power plant output)?
- How can the electricity and heating markets be more closely connected, while also integrating the transport sector?

## **b. Industry**

The industry sector still holds potential for further cuts in emissions. The focus is on climate action as a driving force for efficiency and innovation. The Climate Action Plan must assume that Germany plans to and will have the entire spectrum of industry in 2050 - including energy-intensive sectors.

Key challenges include the following:

- What conditions are needed to initiate innovation, beneficial technology change and substitution processes?
- What conditions have to be created to tap the significant energy efficiency potential available?
- What role does emissions trading play in bringing about climate neutrality in industry?
- What role can and should carbon capture and storage (CCS) play for unavoidable process emissions (steel, cement, lime and basic chemical materials)?
- What framework conditions enable companies and investors to strategically reduce or avoid their exposure to climate risks?



### **c. Buildings**

Direct emissions in households and in the trade, commerce and services sector are primarily generated in buildings as a result of the need for heating, cooling, air conditioning and hot water. Energy consumption in buildings has to be further reduced by 2050 and the share of renewable energy has to be increased.

Key challenges include the following:

- How can efficiency in buildings be increased while ensuring its long-term social compatibility?
- What proportion of renewable heating is needed if we are to achieve the goal of a climate-neutral building stock?
- How can we best support neighbourhood and urban planning and development that is sustainable, climate-friendly and, where possible, climate-adjusted?
- What contribution can technologies such as combined heat and power generation, fuel cells and (electricity-based) renewable heat make in the buildings sector and in neighbourhood development?
- How can we ensure reliability and acceptance for the implementation of a strategy towards a climate-neutral building stock - for the long term, spanning several legislative periods?

To address these questions in particular, the Federal Ministry for the Environment and Building is currently drawing up a strategy on climate-friendly building and housing. This strategy will be incorporated into the Climate Action Plan 2050 and will create a long-term and reliable framework for individuals, villages, towns, cities and neighbourhoods to achieve the goal of an almost climate-neutral building stock by 2050.

### **d. Transport**

In the transport sector, the increased use of efficient and alternative drive technologies, the shift to the most efficient mode of transport and further optimisations of transportation hold considerable potential for reducing energy consumption and greenhouse gas emissions. We will also experience a growing link with the electricity sector in future - accelerated by new technological possibilities.



Key challenges include the following:

- How can the necessary electrification of the transport sector be achieved? What role can electricity-based fuels (power-to-gas/hydrogen, power-to-liquid) play?
- How can synergies from closer links between the transport and energy sectors be used?
- How can we make public passenger transport more attractive, and which additional infrastructure measures are needed to bring this about?
- How can we increase the appeal of rail freight transport?
- How can we create incentives for sustainable urban and spatial development, and increase the share of non-motorised traffic?
- How will production and consumption structures change so that transportation is no longer required?

**e. Agriculture and land use**

By 2050, the agricultural sector will be the proportionally largest source of emissions. This is why it is essential to exploit potential for additional climate action in this sector.

Emissions from agricultural soils (e.g. through ploughing grassland) and emissions and carbon storage in forestry are not yet incorporated into assessments of climate target achievement. In the medium term the potential this sector holds, especially for emission reductions, should also be considered.

Key challenges include the following:

- How can we improve nitrogen efficiency in agriculture?
- How can politics and society help promote healthy nutrition (recommendations by the DGE, the German Nutrition Society)?
- How can land use support climate action, for example through the protection of moorlands and peat bogs?



## **f. Waste management and circular economy**

Regarding the other emissions, well above average reductions have been achieved in the past through waste management and the circular economy in particular.

Key challenges include the following:

- Is it possible to further expand recycling for all types of recyclable waste by 2050, and to achieve a recycling quota of 90 to 100%?

## **g. The German government as role model**

The German government has positioned itself as an ambitious role model with the climate action programmes to date. The Climate Action Plan 2050 should therefore address how this role will develop beyond 2020.

Key challenges include the following:

- How can the German government achieve the goal of climate neutrality for the federal administration well before 2050?
- Which measures can be used to give momentum at an early stage for greater integration of climate action measures in the respective sectors (mobility, buildings, energy supply)?
- How can new standards be implemented to a greater extent for public building projects?



## V Process and timeframe

In 2015 - in the run-up to the Paris conference - the focus in drawing up the National Climate Action Plan 2050 is on the broad dialogue and participation process. This starts with the kick-off conference on 25/26 June 2015 in Berlin. All stakeholders that were involved in drawing up the Climate Action Programme 2020 and that are accompanying implementation of this programme in the Climate Action Alliance have been invited to this conference.

To draw up the first Climate Action Plan 2050, the German government is establishing a dialogue and participation process with the Länder and municipalities, industry, interest groups (churches, associations and trade unions) and civil society, which will also be used to draw up subsequent revised climate action plans.

The key elements of this participation process are the involvement of all target groups affected, discussions on unresolved issues, transparency and continuous coordination with all government ministries in order to foster acceptance of the outcomes from all sides. Additionally, regular provision of information for all parliamentary groups in the German Bundestag is planned from June 2015. Members of these groups are of course welcome to participate in all dialogue events.

After the kick-off conference in June 2015 there will be separate dialogue events with the Länder, municipalities and associations in autumn 2015. Delegates will be nominated for a delegates' committee. This committee will formulate initial recommendations for the German government on the basis of the proposals for measures drawn up at the events. Five regional all-day events will be held by the end of 2015, where around 500 members of the public will hold discussions, make proposals and submit opinions on these recommendations. An online dialogue will also take place.

Once the recommendations have been commented on, the delegates' committee will then forward them again to the Länder, municipalities and associations, which will look at these recommendations again as part of all-day events. The delegates' committee will process the outcomes and will present a catalogue of measures to the German government by April 2016 at the latest.

The German government will review these recommendations and decide whether and in what form they will be incorporated into the first Climate Action Plan 2050.



At a concluding conference, the participation process will be examined again from different perspectives so conclusions can be made for future processes.

The entire process will be documented on the Internet at [www.klimaschutzplan2050.de](http://www.klimaschutzplan2050.de). Both the Climate Action Plan 2050 and the assessment report will be published.